3. (Original) The polynucleotide of Claim 1 wherein the *ANT1* polypeptide has at least 80% sequence identity to the amino acid sequence presented as SEQ ID NO:2.

4. (Original) The polynucleotide of Claim 1 wherein the *ANT1* polypeptide has at least 90% sequence identity to the amino acid sequence presented as SEQ ID NO:2.

5. (Original) The polynucleotide of Claim 1 wherein the *ANT1* polypeptide has the amino acid sequence presented as SEQ ID NO:2.

6. (Original) The polynucleotide of Claim 1 comprising the nucleic acid sequence presented as SEQ ID NO:1, or the complement thereof.

7. (Original) A plant transformation vector comprising an isolated polynucleotide of Claim 1.

8. (Original) A transgenic plant cell comprising the vector of Claim 7.

9. (Original) A method of producing an *ANT1* phenotype in a plant, said method comprising introducing into progenitor cells of the plant a plant transformation vector according to claim 7 and growing the transformed progenitor cells to produce a transgenic plant, wherein said polynucleotide sequence is expressed and said transgenic plant exhibits an *ANT1* phenotype.

10. (Original) A plant obtained by a method of Claim 9.

11. (Original) A plant part obtained from a plant according to Claim 10.

12. (Original) A method of selecting a transformed plant comprising a first polynucleotide comprising the steps of:

(a) introducing into progenitor cells of the plant a plant transformation vector comprising the first polynucleotide and an *ANT1* polynucleotide according to Claim 1, and
(b) growing the progenitor cells to produce a plant that displays the *ANT1* phenotype, wherein the plant that displays the *ANT1* phenotype is selected as a transformed plant that also comprises the first polynucleotide.

13. (New) An isolated nucleic acid sequence encoding an *ANT1* polypeptide having at least 70% sequence identity to the amino acid sequence presented as SEQ ID NO:2.

14. (New) An isolated nucleic acid sequence, wherein the nucleic acid sequence has at least 70% sequence identity to the nucleic acid sequence presented as SEQ ID NO:1.

RESPONSE

AMENDMENTS

The Specification has been amended to delete reference to the hyperlinks, as suggested by the Examiner.

Claim 1 has been amended to spell out the full name of ANT1, as suggested by the Examiner.

Claim 2 has been amended to further clarify claimed invention, as discussed below. Support for "at about 5-10° below the Tm" in Claim 2 is provided in the specification on page 5, paragraph 0027, line 6.

Claims 13 and 14 have been added. Support for new claims 13 and 14 is found in claims 5 and 6, respectfully, as originally filed. Accordingly, no new matter is added by these new claims.

Amendments to the specification or to the claims do not introduce new matter.

Objections to the Specification

On paragraph 3 of the Office Action, the specification was objected to for containing an embedded hyperlink and/or other form of browser-executable code. The paragraph has been amended to delete the hyperlinks.

Claim Rejections

Rejections under 35 U.S.C.§112, second paragraph

In paragraphs 4 through 5 of the Office Action, Claims 1-12 were rejected under 35 USC 112, second paragraph, for the use of the terms "ANT1". On paragraph 5 of the Office Action, claim 2 was rejected under 35 USC 112, second paragraph, for the use of the terms "high stringency conditions". Claim 1 has been amended to state the full name for ANT1 and, as such, the rejection is overcome. Claim 2 has been amended to include a more finite meaning for "high stringency conditions" and, as such, the rejection is overcome. The specification provides a description (page 5, paragraph 0027, line 6) of the meaning of "high stringency conditions". Therefore, the use of the term "high stringency conditions" meets the requirements of 35 USC 112, second paragraph.

Rejections under 35 U.S.C.§112, first paragraph

In paragraphs 6 through 7 of the Office Action, Claims 1-4 and 7-12 were rejected under 35 U.S.C.§112, first paragraph, as allegedly lacking written description. In paragraphs 8 through 9 of the Office Action, Claims 1-4 and 7-12 were rejected under 35 U.S.C.§112, first paragraph, as allegedly lacking enablement.

Written Description

The Office Action stated that the Claims 1, 3, and 4 are drawn to an isolated polynucleotide comprising a nucleic acid sequence which encodes or is complementary to a sequence which encodes an ANT1 polypeptide having at least 70%, 80% or 90%, respectively, sequence identity to the amino acid sequence of SEQ ID NO 2. The Office Action stated that the specification does not disclose what structural features would be conserved in the claimed sequence that would result in the claimed activity. The Office Action also stated the fragment length of SEQ ID NO 1 as claimed in Claim 2 was not

identified, nor did the specification disclose what structural features would be conserved in the claimed sequence that would result in the claimed activity.

Claim 1 as amended recites an isolated polynucleotide comprising a nucleic acid sequence which encodes or is complementary to a sequence which encodes an Anthocyanin 1 (*ANT1*) polypeptide **having at least 70% sequence identity to the amino acid sequence presented as SEQ ID NO:2.** Similarly, Claim 2 as amended recites the polynucleotide of Claim 1 comprising a nucleic acid sequence that hybridizes under high stringency conditions, at about 5-10° below the Tm, to the nucleic acid sequence presented as SEQ ID NO:1, or the complement or a fragment thereof.

The Guidelines for Examination of Patent Applications Under the 35 U.S.C. §112, paragraph 1 "Written Description" Requirement (Federal Register 66, No. 4, January 5, 2001; hereinafter the "Written Description Guidelines") provides instructions for examining patent applications for compliance with the written description requirement of 35 U.S.C.§112, first paragraph.

The Written Description Guidelines state:

(1) There is a strong presumption that an adequate written description of the claimed invention is present when the application is filed;

(2) The Examiner has the initial burden of presenting evidence or reasons why a person skilled in the art would not recognize that the written description of the invention provides support for the claims;

(3) Consequently, rejection of an original claim for lack of written description should be rare;

(4) An Examiner should review the entire application to understand how Applicant provides support for the claimed invention; and

(5) Such a review is conducted *from a standpoint of one of skill in the art at the time the application was filed and should include a determination of the field of the invention and the level of skill and knowledge in the art* (emphasis added).[1]

As stated in the Written Description Guidelines, "In most technologies which are mature, and *wherein the knowledge and level of skill in the art is high*, a written

[1] Written Description Guidelines, at page 1105.

description question **should not be raised** for original claims even if the specification discloses only a method of making the invention and the function of the invention."

As noted above, the specification provides: a description of an exemplary ANT1 amino acid sequence in SEQ ID NO. 2 and the nucleic acid sequence of SEQ ID NO 1; how to determine percent (%) sequence identity (see paragraph 0025); how to determine the ANTI phenotype which was amply described in paragraph 0052; and a description of fragments in paragraphs 0068 and 0078. Thus, those skilled in the art would have recognized that Applicants were in possession of the invention as claimed.

Applicants submit that the knowledge and level of skill in the art, as of the priority date of the instant application, was high, such that those skilled in the art would have recognized that Applicants were in possession of an isolated polynucleotide comprising a nucleic acid sequence which encodes or is complementary to a sequence which encodes an Anthocyanin 1 *(ANT1)* polypeptide **having at least 70% sequence identity to the amino acid sequence presented as SEQ ID NO:2.**

Enablement

On paragraphs 8-9 of the Office Action, claims 1-4 and 7-12 were rejected under 35 USC 112, first paragraph, for lack of enablement. The Office Action stated that the specification is enabling for a polynucleotide comprising SEQ ID NO:1 or a polynucleotide encoding an amino acid sequence SEQ ID NO: 2. The Office Action also stated that the specification does not reasonably provide enablement for the broad scope of the claims. Applicants respectfully traverse the rejection.

Claim 1 as amended recites an isolated polynucleotide comprising a nucleic acid sequence which encodes or is complementary to a sequence which encodes an Anthocyanin 1 *(ANT1)* polypeptide having at least 70% sequence identity to the amino acid sequence presented as SEQ ID NO:2.

The specification provides a description of the characterization of plants exhibiting the *ANT1* Phenotype, see Example 2. RT-PCR analysis confirmed that the gene whose nucleotide sequence is presented as SEQ ID NO:1 (*ANT1*) was specifically overexpressed in tissue from plants having the *ANT1* phenotype, see paragraph 0157. Furthermore, Example 3 provided confirmation of the phenotype/genotype association.

Lastly, the specification provides a method for determining percent sequence identity/homology in paragraphs 0025 and 0026. Given the ample guidance in the specification, those skilled in the art could readily determine, without undue experimentation, whether a polypeptide having 70% identity to the amino acid sequence of SEQ ID NO:2 will encode a protein with the same activity as a protein of SEQ ID NO:2.

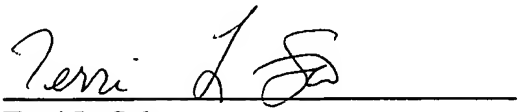
MPEP 2164.01 provides: "The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation". With respect to the instant invention, there is considerable direction and guidance in the specification as to how to make and use the invention, the level of skill in the art was high at the time the application was filed, and all the methods needed to practice the invention were well known. Thus, contrary to the Office Action, it would not require undue trial and error to predict which nucleic acid will encode a protein with the same activity as a protein of SEQ ID NO:2. As such, Claims 1-4 and 7-12 meet the requirements of 35 USC 112, first paragraph.

CONCLUSION

It is believed that all the objections and rejections raised by the Examiner have been addressed and that the application is in condition for allowance. The Examiner is encouraged to telephone the undersigned with any questions or comments regarding this response.

Respectfully submitted,

Date: August 27, 2004



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